

REMARKS

In the Office Action, the Examiner rejected claims 14, 15, 20-22, 24, 25, and 30-32 under 35 U.S.C. § 102(a) as anticipated by KUBINSZKY et al., "Emulation of Ad-Hoc Networks on IEEE 802.11," *Microwaves, Radar and Wireless Communications*, 2000, Vol. 2, pp. 447-450; rejected claims 1, 3, 6-8, 11-14, 17-21, 24, and 27-31 under 35 U.S.C. § 102(e) as anticipated by JABBARNEZHAD (U.S. Patent No. 6,483,811); rejected claims 1, 3, 6-14, 17-24, and 26-33 as anticipated by GESSEL et al. (U.S. Patent No. 5,889,954); rejected claims 16, 17, 19, 26, 27, and 29 under 35 U.S.C. § 103(a) as unpatentable over KUBINSZKY et al. in view of SCHULT et al., "Routing in Mobile Ad Hoc Networks," *Military Communications Conference Proceedings*, 1999, Vol. 1, pp. 10-14; rejected claims 2, 15, 25, and 34-38 under 35 U.S.C. § 103(a) as unpatentable over JABBARNEZHAD in view of SCHULT et al.; rejected claims 2, 15, 25, and 34-38 under 35 U.S.C. § 103(a) as unpatentable over GESSEL et al. in view of SCHULT et al.; and objected to claims 4 and 5 as containing allowable subject matter.

By way of this amendment, claims 19 and 29 have been canceled without prejudice or disclaimer and claims 4, 14, 16, 18, 23, 24, 28, and 33 have been amended to improve form. Claims 1- 18, 20-28, and 30-38 remain pending.

At the outset, Applicants note with appreciation the indication that claims 4 and 5 would be allowable if rewritten into independent form to include all the features of the base claim and any intervening claims.

Claims 14, 15, 20-22, 24, 25, and 30-32 were rejected under 35 U.S.C. § 102(a) as allegedly anticipated by KUBINSZKY et al. Applicants respectfully traverse this rejection with respect to the claims, as now amended.

A proper rejection under 35 U.S.C. § 102 requires that the reference teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be

inherently present. See M.P.E.P. § 2131. Applicants submit that KUBINSZKY et al. does not disclose the combination of features recited in claims 14, 15, 20-22, 24, 25, and 30-32.

For example, amended independent claim 14 recites a method for testing protocols for a network having a plurality of communication devices. The method includes selecting protocol configuration settings to be tested; establishing the protocol configuration settings in each of one or more nodes, where each node is configured to emulate at least one of the plurality of communication devices; simulating operation of the network; broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes; monitoring the operation; and analyzing the monitoring to determine protocol suitability. KUBINSZKY et al. does not disclose or suggest this combination of features.

For example, KUBINSZKY et al. does not disclose or suggest broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes. This feature is similar to a feature that was previously recited in Applicants' claim 19. With respect to that claim, the Examiner appears to admit that KUBINSZKY et al. does not disclose this feature and relied on the "top-left corner of page 11" of SCHULT et al. for allegedly disclosing broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics, as previously recited in Applicants' claim 19 (Office Action, pg. 9). Applicants submit that this section of SCHULT et al. in no way discloses or suggests "broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix

represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes," as currently recited in amended claim 14.

On the top-left corner of page 11, SCHULT et al. discloses that three laydown/movement scenarios were developed to evaluate routing protocols in tactical conditions. This section of SCHULT et al. in no way discloses or suggests broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes, as currently recited in amended claim 14.

The Examiner further alleged with respect to the feature of claim 19 that "examiner assumes a reasonable but broad interpretation of characteristic matrix, as such see claims 16 and/or 17" (Office Action, pg. 9). Applicants submit that claims 16 and 17 recite acts that are performed prior to simulating, while previous claim 19 (and amended claim 14) recites broadcasting that is performed during the simulating. Therefore, it is unclear how the Examiner can reasonably allege that the feature of claim 19 is equivalent to a feature or features recited in claims 16 and 17.

Applicants submit that KUBINSZKY et al. and SCHULT et al., whether taken alone or in any reasonable combination, do not disclose or suggest broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes, as required by amended claim 14.

For at least the foregoing reasons, Applicants submit that claim 14 is not anticipated by KUBINSZKY et al. or rendered obvious based on the combination of KUBINSZKY et al. and SCHULT et al.

Claims 15 and 20-22 depend from claim 14. Therefore, these claims are not anticipated by KUBINSZKY et al. or rendered obvious based on the combination of KUBINSZKY et al. and SCHULT et al. for at least the reasons given above with respect to claim 14.

Amended independent claim 24 recites a computer-readable medium containing instructions for controlling at least one processor to perform a method that tests protocols for a network having a plurality of communication devices. The method includes establishing protocol configuration settings in each of a plurality of nodes, where each of the nodes is configured to emulate at least one of the plurality of communication devices; preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes; simulating operation of the network, where the simulating includes broadcasting the plurality of channel characteristic matrices to the plurality of nodes; monitoring the operation; and analyzing the monitoring to determine protocol suitability. KUBINSZKY et al. does not disclose or suggest this combination of features.

For example, KUBINSZKY et al. does not disclose or suggest preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes. As set forth above, the Examiner admitted that KUBINSZKY et al. does not disclose characteristic matrices (see Office Action, pg. 9). Therefore, KUBINSZKY et al. cannot disclose the above feature of Applicants' claim 24. Moreover, for reasons similar to reasons given above with respect to claim 14, SCHULT et al. does not disclose this feature.

For at least the foregoing reasons, Applicants submit that claim 24 is not anticipated by KUBINSZKY et al. or rendered obvious based on the combination of KUBINSZKY et al. and SCHULT et al.

Claims 25 and 30-32 depend from claim 24. Therefore, these claims are not anticipated by KUBINSZKY et al. or rendered obvious based on the combination of KUBINSZKY et al. and SCHULT et al. for at least the reasons given above with respect to claim 24.

Claims 1, 3, 6-8, 11-14, 17-21, 24, and 27-31 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by JABBARNEZHAD. Claims 19 and 29 have been canceled by way of the present amendment, thereby rendering the rejection of those claims moot. Applicants respectfully traverse the rejection of the remaining claims based on JABBARNEZHAD.

As set forth above, a proper rejection under 35 U.S.C. § 102 requires that the reference teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. See M.P.E.P. § 2131. Applicants submit that JABBARNEZHAD does not disclose the combination of features recited in claims 1, 3, 6-8, 11-14, 17, 18, 20, 21, 24, 27, 28, 30, and 31.

For example, independent claim 1 recites a system for testing protocols for a network having a plurality of network devices. The system includes a simulation controller configured to transmit network configuration information and one or more nodes, where each node is configured to emulate at least one of the plurality of network devices. Each node includes a traffic generator configured to generate, in response to the configuration information, traffic during the protocol testing, and an emulator configured to simulate transmission characteristics of the network. The system further includes an analysis device configured to monitor the one or more nodes during the protocol testing and analyze the monitoring. JABBARNEZHAD does not disclose or suggest this combination of features.

For example, JABBARNEZHAD does not disclose or suggest one or more nodes, where each node is configured to emulate at least one of the plurality of network devices and where each node includes a traffic generator configured to generate, in response to the configuration information from the simulation controller, traffic during the protocol testing, and an emulator configured to simulate transmission characteristics of the network. The Examiner relied on JABBARNEZHAD's element 16 as allegedly corresponding the node recited in claim 1, JABBARNEZHAD's element 84 as allegedly corresponding to the traffic generator recited in claim 1, and JABBARNEZHAD's element 80 as allegedly corresponding to the emulator recited in claim 1 (Office Action, pg. 4). Applicants disagree.

JABBARNEZHAD discloses that element 84 is a traffic generator that provides traffic addressed to network devices 62 to test devices 80 in order to test the ability of test devices 80 to access network devices 62 over localized network 12 (col. 4, lines 16-20). JABBARNEZHAD does not disclose or suggest, however, each of the nodes includes a traffic generator configured to generate, in response to the configuration information from the simulation controller, traffic during the protocol testing, as required by claim 1. In fact, the disclosure of JABBARNEZHAD is in no way related to protocol testing. Instead, as set forth above, JABBARNEZHAD is directed to determining the ability of test devices 80 to access network devices 62 over localized network 12 (col. 4, lines 16-20).

JABBARNEZHAD discloses that element 80 is a test device (col. 4, lines 8-9). Test device 80, as defined by JABBARNEZHAD, is a device being tested for deployment in a distributed network (col. 4, lines 9-11). JABBARNEZHAD discloses that test device 80 may be a router, a communications service unit, a data service unit, or other type of device designed for deployment in a network environment (col. 4, lines 11-13). Contrary to the Examiner's allegation, JABBARNEZHAD does not disclose or suggest that test device 80 is an emulator. If

this position is maintained, Applicants request that the Examiner point out where in JABBARNEZHAD that it is disclosed that test device 80 is an emulator.

Moreover, claim 1 recites that the emulator is configured to simulate transmission characteristics of the network. Even assuming, for the sake of argument, that one skilled in the art could reasonably construe JABBARNEZHAD's test device 80 to correspond to an emulator, JABBARNEZHAD does not disclose or suggest that test device 80 is configured to simulate transmission characteristics of the network. With respect to this feature, the Examiner alleged "the device furthermore simulates transmission characteristics by routing the traffic generated from the traffic generator" (Office Action, pg. 4). Applicants disagree.

JABBARNEZHAD disclose that traffic generator 84 provides traffic addressed to network devices 62 (Fig. 1) to test device 80 to test the ability of test device 80 to access network devices 62 over localized network 12 (col. 4, lines 15-19). It is unclear how the Examiner can reasonably construe this teaching of JABBARNEZHAD to correspond to simulating transmission characteristics of a network. If this position is maintained, Applicants request that the Examiner logically explain how forwarding traffic to network devices to test the ability of test device 80 to access the network devices is equivalent to simulating transmission characteristics of a network.

For at least the foregoing reasons, Applicants submit that claim 1 is not anticipated by JABBARNEZHAD.

Claims 3, 6-8, 11, and 12 depend from claim 1. Therefore, these claims are not anticipated by JABBARNEZHAD for at least the reasons given above with respect to claim 1. Moreover, these claims recite additional features not disclosed or suggested by JABBARNEZHAD.

For example, claim 7 recites that, when transmitting network configuration information, the simulation controller is configured to broadcast at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics. The Examiner relied on col. 4, lines 49-60, of JABBARNEZHAD for allegedly disclosing this feature (Office Action, pg. 4). Applicants submit that this section of JABBARNEZHAD does not disclose or suggest the feature of claim 7.

At col. 4, lines 49-60, JABBARNEZHAD discloses:

The management station 112 is a workstation or other suitable device operable to configure the network devices 62 and the test devices 80 and to monitor the testing of features and functions of the test devices 80. Accordingly, the test devices 80 are connected, configured, tested and monitored at a single location. Moreover, the testing includes testing the ability of the test devices 80 to access the various types of network devices 62 through multiple route and alternate paths of the localized network 12 and through the telephony switch 24 initially or as a backup transmission path. Accordingly, the features and functions of the test devices 80 may be fully demonstrated and problems identified.

This section of JABBARNEZHAD discloses that management station 112 (Fig. 1) configures network devices 62 and test devices 80 and monitors the testing of features and functions of test devices 80. This section of JABBARNEZHAD in no way discloses or suggests that management station 112 or any other device in JABBARNEZHAD's system broadcasts at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics, as required by claim 7. The Examiner has not pointed to any section of JABBARNEZHAD that discloses this feature.

For at least these additional reasons, Applicants submit that claim 7 is not anticipated by JABBARNEZHAD.

Claim 8 recites that, when transmitting network configuration information, the simulation controller is configured to transmit stimuli to each of the one or more nodes, where the stimuli causes the one or more nodes to cease operation, malfunction, begin erroneous

transmissions, or start or stop collecting testing information. The Examiner relied on col. 4, lines 49-60, of JABBARNEZHAD for allegedly disclosing this feature (Office Action, pg. 5). Applicants submit that this section of JABBARNEZHAD does not disclose or suggest the feature of claim 8.

Col. 4, lines 49-60, of JABBARNEZHAD is reproduced above. This section of JABBARNEZHAD discloses that management station 112 (Fig. 1) configures network devices 62 and test devices 80 and monitors the testing of features and functions of test devices 80. This section of JABBARNEZHAD in no way discloses or suggests that management station 112 or any other device in JABBARNEZHAD's system transmit stimuli to each of the one or more nodes, where the stimuli causes the one or more nodes to cease operation, malfunction, begin erroneous transmissions, or start or stop collecting testing information, as required by claim 8. The Examiner has not pointed to any section of JABBARNEZHAD that discloses this feature.

For at least these additional reasons, Applicants submit that claim 8 is not anticipated by JABBARNEZHAD.

Claim 11 recites that the one or more nodes are further configured to collect, during the protocol testing, testing information, and transfer the testing information to the analysis device. The Examiner relied on col. 4, lines 49-60, of JABBARNEZHAD for allegedly disclosing this feature (Office Action, pg. 5). Applicants submit that this section of JABBARNEZHAD does not disclose or suggest the feature of claim 11.

Col. 4, lines 49-60, of JABBARNEZHAD is reproduced above. This section of JABBARNEZHAD discloses that management station 112 (Fig. 1) configures network devices 62 and test devices 80 and monitors the testing of features and functions of test devices 80. This section of JABBARNEZHAD in no way discloses or suggests that test site 16, which the Examiner alleged corresponds to the recited node (Office Action, pg. 4), collects, during the

protocol testing, testing information, and transfers the testing information to an analysis device, as required by claim 11. The Examiner has not pointed to any section of JABBARNEZHAD that discloses these features.

For at least these additional reasons, Applicants submit that claim 11 is not anticipated by JABBARNEZHAD.

Independent claim 13 recites features similar to features recited above with respect to claim 1. Therefore, this claim is not anticipated by JABBARNEZHAD for reasons similar to reasons given above with respect to claim 1.

Amended independent claim 14 recites a method for testing protocols for a network having a plurality of communication devices. The method includes selecting protocol configuration settings to be tested; establishing the protocol configuration settings in each of one or more nodes, where each node is configured to emulate at least one of the plurality of communication devices; simulating operation of the network; broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes; monitoring the operation; and analyzing the monitoring to determine protocol suitability. JABBARNEZHAD does not disclose or suggest this combination of features.

For example, JABBARNEZHAD does not disclose or suggest broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes. JABBARNEZHAD merely discloses that management station 112 configures test device 80 and monitors the testing of features and functions of test device 80 (col. 4, lines 49-52). JABBARNEZHAD in no way

discloses that management device 112 (or any other device in the JABBARNEZHAD system) broadcasts, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes, as required by amended independent claim 14.

For at least the foregoing reasons, Applicants submit that claim 14 is not anticipated by JABBARNEZHAD.

Claims 17, 18, 20, and 21 depend from claim 14. Therefore, these claims are not anticipated by JABBARNEZHAD for at least the reasons given above with respect to claim 14. Moreover, these claims recite features similar to features recited above with respect to claims 3, 6-8, 11, and 12. Therefore, Applicants submit that claims 17, 18, 20, and 21 are not anticipated by JABBARNEZHAD for reasons similar to reasons given above with respect to claims 3, 6-8, 11, and 12.

Amended independent claim 24 recites a computer-readable medium containing instructions for controlling at least one processor to perform a method that tests protocols for a network having a plurality of communication devices. The method includes establishing protocol configuration settings in each of a plurality of nodes, where each of the nodes is configured to emulate at least one of the plurality of communication devices; preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes; simulating operation of the network, where the simulating includes broadcasting the plurality of channel characteristic matrices to the plurality of nodes; monitoring the operation; and analyzing the monitoring to

determine protocol suitability. JABBARNEZHAD does not disclose or suggest this combination of features.

For example, JABBARNEZHAD does not disclose or suggest preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes. JABBARNEZHAD merely discloses that management station 112 configures test device 80 and monitors the testing of features and functions of test device 80 (col. 4, lines 49-52). JABBARNEZHAD in no way discloses that management device 112 (or any other device in the JABBARNEZHAD system) prepares a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes, as required by amended independent claim 24.

For at least the foregoing reasons, Applicants submit that claim 24 is not anticipated by JABBARNEZHAD.

Claims 27, 28, 30, and 31 depend from claim 24. Therefore, these claims are not anticipated by JABBARNEZHAD for at least the reasons given above with respect to claim 24. Moreover, these claims recite features similar to features recited above with respect to claims 3, 6-8, 11, and 12. Therefore, Applicants submit that claims 27, 28, 30, and 31 are not anticipated by JABBARNEZHAD for reasons similar to reasons given above with respect to claims 3, 6-8, 11, and 12.

Claims 1, 3, 6-14, 17-24, and 26-33 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by GESSEL et al. Claims 19 and 29 have been canceled by way of the present

amendment, thereby rendering the rejection of those claims moot. Applicants respectfully traverse the rejection of the remaining claims based on GESSEL et al.

As set forth above, a proper rejection under 35 U.S.C. § 102 requires that the reference teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. See M.P.E.P. § 2131. Applicants submit that GESSEL et al. does not disclose the combination of features recited in claims 1, 3, 6-14, 17, 18, 20-24, 26-28, and 30-33.

For example, independent claim 1 recites a system for testing protocols for a network having a plurality of network devices. The system includes a simulation controller configured to transmit network configuration information and one or more nodes, where each node is configured to emulate at least one of the plurality of network devices. Each node includes a traffic generator configured to generate, in response to the configuration information, traffic during the protocol testing, and an emulator configured to simulate transmission characteristics of the network. The system further includes an analysis device configured to monitor the one or more nodes during the protocol testing and analyze the monitoring. GESSEL et al. does not disclose or suggest this combination of features.

For example, GESSEL et al. does not disclose or suggest one or more nodes, where each node is configured to emulate at least one of the plurality of network devices and where each node includes a traffic generator configured to generate, in response to the configuration information from the simulation controller, traffic during the protocol testing, and an emulator configured to simulate transmission characteristics of the network. The Examiner relied on GESSEL et al.'s elements 12-16 as allegedly corresponding the node recited in claim 1 (Office Action, pg. 5). Applicants submit that the Examiner has completely ignored features recited in Applicants' claim 1.

Claim 1 specifically recites that each node includes a traffic generator configured to generate, in response to the configuration information from the simulation controller, traffic during the protocol testing. GESSEL et al.'s elements 12-16 are emulators (see Fig. 1). Assuming, as alleged by the Examiner, that GESSEL et al.'s emulators 12-16 correspond to the recited one or nodes, GESSEL et al. does not disclose or suggest that emulators 12-16 include a traffic generator configured to generate, in response to the configuration information from the simulation controller, traffic during the protocol testing, as required by claim 1. The Examiner completely ignored this feature of claim 1. Accordingly, a *prima facie* case of anticipation has not been established with respect to claim 1.

For at least the foregoing reasons, Applicants submit that claim 1 is not anticipated by GESSEL et al.

Claims 3 and 6-12 depend from claim 1. Therefore, these claims are not anticipated by GESSEL et al. for at least the reasons given above with respect to claim 1. Moreover, these claims recite additional features not disclosed or suggested by GESSEL et al.

For example, claim 7 recites that, when transmitting network configuration information, the simulation controller is configured to broadcast at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics. The Examiner relied on col. 7, line 50, to col. 8, line 46, of GESSEL et al. for allegedly disclosing this feature (Office Action, pg. 6). Applicants submit that this section of GESSEL et al. does not disclose or suggest the feature of claim 7.

At col. 7, line 50, to col. 8, line 46, GESSEL et al. discloses that Multiple Emulator Signal Handler (MESH) 11 includes a designer function 25 that serves to configure the network, define nodes, define which nodes are to operate on which workstations, establish connections, etc.; a supervisory function 26 that serves to manage and operate the network, including

launching the network, monitoring the status of nodes and links, and reconfiguring the network when requested; and a message monitor function 27 that allows an operator to view raw signaling data as it passes between network manager 10 and emulators 12-16, protocol simulator 17, or other tools 18. This section of GESSEL et al. also discloses that a Protocol Simulator Based Monitor (PSBM) function 36 decodes traffic data prior to display to the operator.

This section of GESSEL et al. in no way discloses or suggests that MESH 11, which the Examiner alleged corresponds to the recited simulation controller (see Office Action, pg. 5), broadcast at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics, as required by claim 7. The Examiner has not pointed to any section of GESSEL et al. that discloses this feature.

For at least these additional reasons, Applicants submit that claim 7 is not anticipated by GESSEL et al.

Claim 11 recites that the one or more nodes are further configured to collect, during the protocol testing, testing information, and transfer the testing information to the analysis device. The Examiner relied on the Abstract and col. 7, line 50, to col. 8, line 46, of GESSEL et al. for allegedly disclosing these features (Office Action, pg. 6). Applicants submit that these sections of GESSEL et al. do not disclose or suggest the features of claim 11.

In the Abstract, GESSEL et al. discloses:

A network manager for configuring and controlling a simulated telecommunications network having a plurality of nodes which communicate in a plurality of communications protocols. The network manager dynamically connects and disconnects each of the plurality of nodes to the network. The network manager also determines which of the plurality of communications protocols is utilized by each of the plurality of nodes, establishes connections between nodes which communicate in compatible communications protocols, and denies connections requested between nodes which communicate in incompatible communications protocols. The network manager includes a Design function and

a Supervisory function. The Design function sets up the network, defines nodes, defines which nodes are to operate on which workstations, and establishes connections. The Supervisory function manages and operates the network. This includes launching the network, monitoring the nodes and links, and reconfiguring the network when requested. The Supervisory function initiates each node, dynamically takes nodes down and brings them back up again, severs links and reinstates them, and provides an operator with status information for each node and each link in the network. A Graphical User Interface is provided for operator interaction with the network manager.

This section of GESSEL et al. discloses that a network manager includes a design function that sets up the network, defines nodes, defines which nodes are to operate on which workstations, and establishes connections, and a Supervisory function that manages and operates the network by launching the network, monitoring the nodes and links, and reconfiguring the network when requested. This section of GESSEL et al. in no way discloses or suggests that emulators 12-16, which the Examiner alleged corresponds to the recited one or more nodes (Office Action, pg. 5), collect, during the protocol testing, testing information and transfer the testing information to an analysis device, as required by claim 11.

Col. 7, line 50, to col. 8, line 46, of GESSEL et al. is reproduced above. This section of GESSEL et al. discloses that MESH 11 includes a designer function 25 that serves to configure the network, define nodes, define which nodes are to operate on which workstations, establish connections, etc.; a supervisory function 26 that serves to manage and operate the network, including launching the network, monitoring the status of nodes and links, and reconfiguring the network when requested; and a message monitor function 27 that allows an operator to view raw signaling data as it passes between network manager 10 and emulators 12-16, protocol simulator 17, or other tools 18. This section of GESSEL et al. also discloses that a PSBM function 36 decodes traffic data prior to display to the operator. This section of GESSEL et al. in no way discloses or suggests that emulators 12-16, which the Examiner alleged corresponds to the recited one or more nodes (Office Action, pg. 5), collects, during the protocol testing, testing

information, and transfers the testing information to an analysis device, as required by claim 11.

The Examiner has not pointed to any section of GESSEL et al. that discloses these features.

For at least these additional reasons, Applicants submit that claim 11 is not anticipated by GESSEL et al.

Independent claim 13 recites features similar to features recited above with respect to claim 1. Therefore, this claim is not anticipated by GESSEL et al. for reasons similar to reasons given above with respect to claim 1.

Amended independent claim 14 recites a method for testing protocols for a network having a plurality of communication devices. The method includes selecting protocol configuration settings to be tested; establishing the protocol configuration settings in each of one or more nodes, where each node is configured to emulate at least one of the plurality of communication devices; simulating operation of the network; broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes; monitoring the operation; and analyzing the monitoring to determine protocol suitability. GESSEL et al. does not disclose or suggest this combination of features.

For example, GESSEL et al. does not disclose or suggest broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, where the at least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes. GESSEL et al. merely discloses that MESH 11 initiates each node and gets it up and running (col. 7, lines 65-67). GESSEL et al. in no way discloses that MESH 11 (or any other device in the GESSEL et al. system) broadcasts, during the simulating, at least one characteristic matrix to the one or more nodes, where the at

least one characteristic matrix represents changing network transmission characteristics and is determined based on a terrain and a trajectory of the one or more nodes, as required by amended independent claim 14.

For at least the foregoing reasons, Applicants submit that claim 14 is not anticipated by GESSEL et al.

Claims 17, 18, and 20-23 depend from claim 14. Therefore, these claims are not anticipated by GESSEL et al. for at least the reasons given above with respect to claim 14. Moreover, these claims recite features similar to features recited above with respect to claims 3 and 6-12. Therefore, Applicants submit that claims 17, 18, and 20-23 are not anticipated by GESSEL et al. for reasons similar to reasons given above with respect to claims 3 and 6-12.

Amended independent claim 24 recites a computer-readable medium containing instructions for controlling at least one processor to perform a method that tests protocols for a network having a plurality of communication devices. The method includes establishing protocol configuration settings in each of a plurality of nodes, where each of the nodes is configured to emulate at least one of the plurality of communication devices; preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes; simulating operation of the network, where the simulating includes broadcasting the plurality of channel characteristic matrices to the plurality of nodes; monitoring the operation; and analyzing the monitoring to determine protocol suitability. GESSEL et al. does not disclose or suggest this combination of features.

For example, GESSEL et al. does not disclose or suggest preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic

matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes. GESSEL et al. merely discloses that supervisor 26 handles changes to the network configuration at run-time (col. 8, lines 47-48). GESSEL et al. in no way discloses that supervisor 26 (or MESH 11) prepares a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, where the channel characteristic matrices represent changing network transmission characteristics and are generated based on a terrain and a trajectory of the plurality of nodes, as required by amended independent claim 24.

For at least the foregoing reasons, Applicants submit that claim 24 is not anticipated by GESSEL et al.

Claims 26-28 and 30-33 depend from claim 24. Therefore, these claims are not anticipated by GESSEL et al. for at least the reasons given above with respect to claim 24. Moreover, these claims recite features similar to features recited above with respect to claims 3 and 6-12. Therefore, Applicants submit that claims 26-28 and 30-33 are not anticipated by GESSEL et al. for reasons similar to reasons given above with respect to claims 3 and 6-12.

Claims 16, 17, 19, 26, 27, and 29 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over KUBINSZKY et al. in view of SCHULT et al. Claims 19 and 29 have been canceled by way of the present amendment, thereby rendering the rejection of those claims moot. Applicants respectfully traverse the rejection of the remaining claims based on KUBINSZKY et al. and SCHULT et al.

Claims 16 and 17 depend from claim 14. As set forth above, the disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of KUBINSZKY et al. set forth above with respect to claim 14. Therefore, Applicants submit that claims 16 and 17 are patentable over KUBINSZKY et al. and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 14.

Claims 26 and 27 depend from claim 24. As set forth above, the disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of KUBINSZKY et al. set forth above with respect to claim 24. Therefore, Applicants submit that claims 26 and 27 are patentable over KUBINSZKY et al. and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 24.

Claims 2, 15, 25, and 34-38 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over JABBARNEZHAD in view of SCHULT et al. Applicants respectfully traverse.

Claim 2 depends from claim 1. The disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of JABBARNEZHAD set forth above with respect to claim 1. Therefore, Applicants submit that claim 2 is patentable over JABBARNEZHAD and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Claim 15 depends from claim 14. The disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of JABBARNEZHAD set forth above with respect to claim 14. Therefore, Applicants submit that claim 15 is patentable over JABBARNEZHAD and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 14.

Claim 25 depends from claim 24. The disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of JABBARNEZHAD set forth above with respect to claim 24. Therefore, Applicants submit that claim 25 is patentable over JABBARNEZHAD and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 24.

Independent claim 34 recites a system for simulating an ad hoc network, where the ad hoc network has a plurality of ad hoc devices. The system includes a plurality of nodes, where each node is configured to emulate at least one of the plurality of ad hoc devices, generate and receive traffic, and simulate transmission characteristics; and an analysis device configured to monitor the plurality of nodes, collect test information, and analyze the test information.

JABBARNEZHAD and SCHULT et al. do not disclose or suggest this combination of features.

For example, JABBARNEZHAD and SCHULT et al. do not disclose or suggest a plurality of nodes, where each node is configured to emulate at least one of the plurality of ad hoc devices, generate and receive traffic, and simulate transmission characteristics. The Examiner did not specifically address this feature (Office Action, pg. 11). With respect to claim 1, the Examiner relied on JABBARNEZHAD's test site 16 as allegedly corresponding the node recited in claim 1 (Office Action, pg. 4). Applicants submit that JABBARNEZHAD's test site 16 does not emulate at least one of the plurality of ad hoc devices, generate and receive traffic, and simulate transmission characteristics, as required by claim 34.

JABBARNEZHAD discloses that test site 16 includes a traffic generator 84 and that provides traffic addressed to network devices 62 to test devices 80 in order to test the ability of test devices 80 to access network devices 62 over localized network 12 (col. 4, lines 16-20). JABBARNEZHAD does not disclose or suggest, however, that traffic generator 84 simulates transmission characteristics, as required by claim 34.

JABBARNEZHAD discloses that test site 16 also include a test device 80 (col. 4, lines 8-9). Test device 80, as defined by JABBARNEZHAD, is a device being tested for deployment in a distributed network (col. 4, lines 9-11). JABBARNEZHAD discloses that test device 80 may be a router, a communications service unit, a data service unit, or other type of device designed for deployment in a network environment (col. 4, lines 11-13). JABBARNEZHAD does not

disclose or suggest that test device 80 simulates transmission characteristics, as required by claim 34. With respect to this feature in claim 1, the Examiner alleged "the device furthermore simulates transmission characteristics by routing the traffic generated from the traffic generator" (Office Action, pg. 4). Applicants disagree.

JABBARNEZHAD disclose that traffic generator 84 provides traffic addressed to network devices 62 (Fig. 1) to test device 80 to test the ability of test device 80 to access network devices 62 over localized network 12 (col. 4, lines 15-19). It is unclear how the Examiner can reasonably construe this teaching of JABBARNEZHAD to correspond to simulating transmission characteristics. If this position is maintained, Applicants request that the Examiner logically explain how forwarding traffic to network devices to test the ability of test device 80 to access the network devices is equivalent to simulating transmission characteristics. The disclosure of SCHULT et al. does not remedy the above deficiencies in the disclosure of JABBARNEZHAD.

For at least the foregoing reasons, Applicants submit that claim 34 is patentable over JABBARNEZHAD and SCHULT et al., whether taken alone or in any reasonable combination.

Claims 35-38 depend from claim 34. Therefore, these claims are patentable over JABBARNEZHAD and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 34.

Claims 2, 15, 25, and 34-38 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over GESSEL et al. in view of SCHULT et al. Applicants respectfully traverse.

Claim 2 depends from claim 1. The disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of GESSEL et al. set forth above with respect to claim 1. Therefore, Applicants submit that claim 2 is patentable over GESSEL et al. and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with

respect to claim 1. Moreover, this claim is patentable over GESSEL et al. and SCHULT et al. for reasons of its own.

Claim 2 recites that the network is an ad hoc network and each of the plurality of nodes is an ad hoc network device. The Examiner admitted that GESSEL et al. does not disclose these features and relied on page 11 of SCHULT et al. for allegedly disclosing these features (Office Action, pg. 12).

While not acquiescing in the Examiner's allegation regarding the teachings of SCHULT et al., Applicants submit that one skilled in the art would not have been motivated to incorporate SCHULT et al.'s alleged teaching of an ad hoc network and ad hoc devices into GESSEL et al.'s system, absent impermissible hindsight. With respect to motivation, the Examiner alleged that "the motivation for modifying the reference or to combine reference teachings would be that *Schult* teaches that an ad hoc network is dynamically changing and *Gessel* teaches a dynamically changing network that could be wireless" (Office Action, pg. 12). Applicants submit that the Examiner has misinterpreted the disclosure of GESSEL et al.

While GESSEL et al. appears to disclose that a network manager can dynamically connect and disconnect the nodes to the network (see Abstract), GESSEL et al. in no way discloses or suggests that the nodes are wireless nodes, as alleged by the Examiner. If the Examiner maintains this rejection, Applicants respectfully request that the Examiner specifically point out where in GESSEL et al. it is disclosed that the nodes are wireless nodes.

The mere fact that SCHULT et al. and GESSEL et al. disclose dynamically changing networks would in no way lead one skilled in the art to combine these disparate documents. Applicants submit that the Examiner's motivation has been impermissibly gleaned from Applicants' own disclosure.

For at least these additional reasons, Applicants submit that claim 2 is patentable over GESSEL et al. and SCHULT et al., whether taken alone or in any reasonable combination.

Claim 15 depends from claim 14. The disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of GESSEL et al. set forth above with respect to claim 14. Therefore, Applicants submit that claim 15 is patentable over GESSEL et al. and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 14.

Claim 25 depends from claim 24. The disclosure of SCHULT et al. does not remedy the deficiencies in the disclosure of GESSEL et al. set forth above with respect to claim 24. Therefore, Applicants submit that claim 25 is patentable over GESSEL et al. and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 24.

Independent claim 34 recites a system for simulating an ad hoc network, where the ad hoc network has a plurality of ad hoc devices. The system includes a plurality of nodes, where each node is configured to emulate at least one of the plurality of ad hoc devices, generate and receive traffic, and simulate transmission characteristics; and an analysis device configured to monitor the plurality of nodes, collect test information, and analyze the test information. GESSEL et al. and SCHULT et al. do not disclose or suggest this combination of features.

For example, GESSEL et al. and SCHULT et al. do not disclose or suggest a plurality of nodes, where each node is configured to emulate at least one of the plurality of ad hoc devices, generate and receive traffic, and simulate transmission characteristics. As set forth in detail above with respect to claim 2, Applicants submit that one skilled in the art would not be motivated to combine the teachings of GESSEL et al. and SCHULT et al., absent impermissible hindsight.

For at least the foregoing reasons, Applicants submit that claim 34 is patentable over GESSEL et al. and SCHULT et al., whether taken alone or in any reasonable combination.

Claims 35-38 depend from claim 34. Therefore, these claims are patentable over GESSEL et al. and SCHULT et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 34.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Applicant believes no fee is due with this response other than as reflected on the enclosed Fee Transmittal. However, if a fee is due, please charge our Deposit Account No. 18-1945, under Order No. BBNT-P01-112 from which the undersigned is authorized to draw.

Dated: September 23, 2004

Respectfully submitted,

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